

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

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The Examiner provisionally rejects claims 1, 6, 8-10, 14 & 23-28 under 35 U.S.C. §102 as claiming the same invention as U.S. Patent 3,656,112 by Paull.

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The Examiner rejects claim 1 as being unpatentable over Paull. The Examiner states that Paull discloses power line communication in the form of a system for handing off or exchanging information comprising: tethered device connected to power transmission communication network having transceiver and power transmission communication system and untethered device/portable having a transceiver for transceiving radio signals to remote location.

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I cannot agree. Paull does disclose the transmission of information and exchange of information; however, Paull never discloses a method of handoff consisting of a process of transferring an ongoing call or data session from one access point connected to the core network to another access point. The exchanging of information does not constitute the exchanging of untethered devices connected to a first access point so that it is reassigned to a second access point. Also Paull never uses other synonyms for handoff such as reassigning. One skilled in the art of telecommunication would realize that Paull does not teach handoff but only to the transmission or exchanging of information, and that not every wireless device incorporates a method of handoff or a special protocol to support handoff. One skilled in the art of telecommunication would realize that Paull states that the interrogator only talks to one meter at a time.

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"This permits an interrogation operation to be carried out over a multi-station communication link with the assurance that one and only one reply station will respond to each interrogation message transmitted by the interrogator, and the identity of the reply station will be known to the interrogator." (Paull - Col. 1, Line 45-50) One skilled in the art would recognize that Paull's communication system

would not be beneficial for reassigning multiple devices and that only one meter could be read at one time.

Furthermore, Paull's filing date was March 14th, 1969 which is before the U.S.

5 Patent Office's Art Unit 455/436 was established for subject matter wherein a mobile station during a call is switched from a first to a second serving base station, which may be located in different cells (inter-handoff) or located within a cell (intra-handoff) and USPTO Art Unit 455/442 was established for subject matter wherein the mobile station maintains its assigned channel while entering a
10 new cell (e.g., make before break). This Applicant has not found a patent in the Art Unit 455/442 and Art Unit 455/436 that uses Paull as a prior art reference. Furthermore, the USPTO has accepted the fact based on the non-reference to Paull and the creation of two distinct art units that handoff is not just exchanging information but a complex method of reassigning devices from one base station
15 to another base station.

Furthermore, Paull does disclose exchanging information with reply stations.

However, Paull specifically says the exchange of information is with a single reply station instead of having the ability to exchange information with multiple reply
20 stations. [col.1, line 25 to col.1, line 50] Therefore, Paull is saying that this is not handoff but just the transmission of data. Paull's patent is not consistent with art related to handoff whereby multiple untethered devices can be handed off in parallel and at the same time.

25 Although the Applicant believes that Claim 1 was clearly defined over the references cited by the Examiner, the claim has been modified in order to clarify the invention in this respect.

The Examiner rejects claim 6 as being unpatentable over Paull. The Examiner
30 states that Paull discloses power line communication in the form of a system for handing off or exchanging information by wireless network.

I cannot agree. Paull does disclose the exchange of information, but never discloses the method of handoff. Furthermore, Paull does disclose the exchange of information over wireless network or power line communication network. Paull teaches that in case of power line communication, the system employs a wireless link to by-pass each transformed in the transmission path in order to transmit from one side of the other side of each transformer in the path. [col.1, line 55 to col.1, line 60] Paull never teaches that these wireless links to by-pass are actually access points used for handover. Paull teaches that these wireless links are only used for by-passing the transformer. Also, Paull teaches that power line communication can never be used between the wireless links to by-pass the transformer since the results would be that the transformer would not allow the communication to occur. This Applicant specifically teaches that the wireless links on the roadway luminaires can use powerline communication for the communication method for handoff since transformers may not be placed between roadway luminaires. One skilled in the art of powerline communications would realize that Paull teaches that the wireless by-pass being used on Utility Poles are for communication by-pass and that the transformers are used to convert medium/high voltages into lower voltages. This Applicant specifically teaches that a wireless by-pass is not needed on a roadway luminaire because the transformer may not be hung from a roadway luminaire. Furthermore, this Application teaches that the roadway luminaire can communicate and can handoff untethered devices over powerline communications with other roadway luminaires because transformers do not filter between them.

Although the Applicant believes that Claim 6 was clearly defined over the references cited by the Examiner, the claim has been modified in order to clarify the invention in this respect.

The Examiner rejects claim 8 as being unpatentable over Paull. The Examiner states that Paull discloses the transceiver connected to the power communication network operates inside a lighting apparatus. [figs. 1-2, 11, col. 10, line 74 to col. 11, line 15].

I cannot agree. Paull discloses a photoelectric shaft rotation sensor comprising a pair of pulsed light sources. [col. 10 line 74] The pulsed light sources are positioned behind a rotating disc attached to the rotating shaft. [col. 11 line 1 to col. 11 line 3] Paull discloses that these pulsed light sources may be substituted for incandescent light, and that the rotation disc may be the revolving disc in a watt-hour meter. [col. 11 line 2 to col. 11 line 3] Paull disclosed that the purpose of the light source is to read the disc as it rotates around so as to measure the energy used while the Applicant discloses that the light source is used to illuminate a roadway. One skilled in the art of roadway illumination would realize that Paull's patent would not be able to illuminate the roadway. Paull does not teach that the photoelectric shaft or pulsed light sources is enclosed around a powerline communication device. Paull also does not disclose that the photoelectric shaft or pair of pulsed light sources is attached to a utility pole or a roadway luminaire. Paull specifically states that the photoelectric shaft and pulsed light sources are fit inside an electric meter and is based on low voltage. One skilled in the art of meter reading would assume that a ballast would not be needed to power up the photoelectric shaft or pair of pulsed light sources, and the light sources are not bright enough to provide visibility on a roadway. Finally, one skilled in the art of meter reading would assume that Paull discloses that the photoelectric shaft must be non-removable so as to insure the data being gathered is not voided by criminal actions while the Applicant discloses that the roadway luminaire has a removable photosensor.

The Examiner rejects claims 9-10 as being unpatentable over Paull. The Examiner states that Paull discloses the untethered/device/portable (100) having a transceiver (102,103) for transceiving radio signals to remote location (400). [figs. 1-2, col. 2, line 65 to col. 3, line 40 and lines 62-75]

I cannot agree. Paull discloses a device using radio or acoustic or powerline or any combination of these. [col. 1, line 65 to col. 1, line 70]. Paull does not disclose a device using infrared, ultraviolet, laser, visible light, magnetic, ultra

wideband, or a combination of these communication methods. Furthermore, Paull does not disclose a method of handoff nor reference prior art using wireless handoff protocol such as 802.11e.

5 The Examiner rejects claim 14 as being unpatentable over Paull. The Examiner states that Paull discloses the tethered device (300) connected to power transmission communication network having transceiver (301,306) and power transmission communication system (203) [figs 1-2, col.3, lines 3-22].

10 I cannot agree. Paull never discloses a device that does not integrate the receiver or the transmitter and whereby said receiver or said transmitter is located in a different location such that the device can still use said receiver or transmitter. Paull also never discloses a mesh network.

15 In similar fashion for the rejection of handoff in claim 1, the Examiner rejects claims 23-25. The Examiner states that Paull discloses power line communication in the form of a system for handing off or exchanging information [figs. 1-2, col. 2, line 65 to col. 3, line 40]. The Examiner also states that Paull discloses a tethered device (300) connected to power transmission
20 communication network having transceiver (301,306) and power transmission communication system (203) [figs 1-2, col. 3, lines 3-22]

I cannot agree. Please reference page 12 – line 15 for Applicant's remarks.

25 In similar fashion for the rejection of handoff in claim 1, the Examiner rejects claims 23-25. Examiner also states that Paull discloses the transceiver (301,306) connected to the power communication network operates inside a lighting apparatus (821,822) which connects to electrical outlet inherently [figs 1-2, 11, col.10,line 74 to col. 11, line15] Examiner also states that Paull discloses
30 untethered device/portable (100) having a transceiver (102,103) for transceiving radio signals to remote location (400) [figs. 1-2, col.2, line 65 to col.3, line 40]

I cannot agree. Please reference page 14 – line 25 for Applicant's remarks.
Furthermore, Paull does not disclose that the lighting apparatus is removable and directly connected to an electric outlet. Paull does disclose that it is powered by electricity however.

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Although the Applicant believes that Claims 23-25 were clearly defined over the references cited by the Examiner, the claim has been modified in order to clarify the invention in this respect.

10 In similar fashion for the rejection of handoff in claim 1, the Examiner rejects claim 26. The Examiner states that Paull discloses power line communication in the form of a system for handing off or exchanging information by wireless network [figs. 1-2, col.2, line 65 to col.3, line 40].

15 I cannot agree. Please reference page 12 – line 15 for Applicant's remarks.

The Examiner rejects claims 27-28 as being unpatentable over Paull. The Examiner states that Paull discloses the tethered device (300) connected to power transmission communication network having transceiver (301,306) to
20 transmit signals to remote location as programmed [figs. 1-2, col.3, lines 3-22].

I cannot agree that the Examiner rejects claim 27. Paull does disclose the use of power transmission communication network. However, Paull never discloses the use of a physical interface attached to the power network that can accept
25 removable electric devices and switches on and off the luminescence of a lighting apparatus at the same time. Moreover, this physical interface can be used as the interface to the power transmission communication network.

Although the Applicant believes that claim 27 was clearly defined over the
30 references cited by the Examiner, the claim has been modified in order to clarify the invention in this respect.

I cannot agree that the Examiner rejects claim 28. Please reference page 12 – line 15 for Applicant's remarks.

The Examiner provisionally rejects claim 7 and claims 12-13 under 35 U.S.C. §
5 103 as obvious to a person having ordinary skill in the art in reference to U.S. Patent 3,656,112 by Paull and U.S. Patent 5,983,073 by Ditzik.

The Examiner rejects claim 7 as being unpatentable over Paull in view of Ditzik. The Examiner states Paull teaches a means for determining a location of the
10 subscriber device (500) [col. 1, line 38-50]. Paull also discloses transmitting data signal to the device [col. 1, lines 26-50], informing the device of location data [col. 1, lines 26-50], determining a time of arrival [col. 4, lines 60-73]. Examiner states that Paull does not specifically mention evaluating data with respect to the untethered device as claimed by applicant. However, Ditzik discloses a wireless
15 communication including cell phone (14), notebook computer (51) that may perform their duties in data communication as programmed [figs. 2-3, abstract].

The Examiner also states that it would be obvious to one having ordinary skill in the art to utilize the teaching of Arjomand in the system of Birchfield to perform
20 their duties as evaluating data and transmitting data signals to remote locations as required.

I have assumed that the Examiner has made a mistake in saying Arjomand and Birchfield as references. I am assuming that the Examiner meant Paull and
25 Ditzik.

Therefore, I cannot agree with the Examiner stating that it would be obvious to one having ordinary skill in the art to utilize the teaching of Paull in the system of Ditzik to perform their duties in evaluating data and transmitting data signals to
30 remote locations as required. The combination of Paull and Ditzik would not produce the same results as required. Ditzik does not disclose an access point that is capable of handing off or reassigning wireless devices. Ditzik never

mentions a method of handoff. One skilled in the art of cellular communication would realize that the base station is responsible for handing off a cellular phone from one base station to another.

- 5 Using the combined reference of Paull and Ditzik also represents impermissible hindsight because the references were addressing different problems. If Paull and Ditzik were trying to solve the same problem, one would expect at least some overlapping prior art references. There is no overlapping art. Therefore, the combination does not seem reasonable and there is no motivation to combine
10 the references.

Although the Applicant believes that claim 7 was clearly defined over the references cited by the Examiner, the claim has been modified in order to clarify the invention in this respect.

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The Examiner rejects claim 12-13 as being unpatentable over Paull in view of Ditzik. The Examiner states Ditzik discloses the wireless communication including cell phone (14), notebook computer (51) that may perform their duties in data communication as programmed [figs. 2-3, abstract].

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The combination of Ditzik and Paull does not provide for the ability to repeat data, or track items through real time position. Therefore, the combination of these references would not produce the same results.

- 25 Using the combined reference of Paull and Ditzik also represents impermissible hindsight because the references were addressing different problems. If Paull and Ditzik were trying to solve the same problem, one would expect at least some overlapping prior art references. There is no overlapping art. Therefore, the combination does not seem reasonable and there is no motivation to combine
30 the references.

The Examiner must accept that a roadway luminaire is not a photo sensor used for reading a utility meter, but a lighting apparatus used in roadways. A roadway luminaire is not the utility pole used to hang transformers. A roadway luminaire is a streetlight used for providing luminescence to a road.

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The Examiner must also accept that handoff is not just the transmission or exchanging of information by a communication device. Also, not all wireless devices support handoff. This is obvious to a person skilled in the art of communication that a specific handoff method or protocol is needed for wireless communication.

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Accordingly, the Applicant believes the Application, as amended, is in condition for allowance, and such action is respectfully requested.

15 **Respectfully submitted,**

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(EDITED VERSION OF CLAIMS)

CLAIMS

1. A system for handoff comprising:

- a. [At] at least one tethered device with power line communication circuitry tethered
to a roadway luminaire, and
b. [A] said tethered device has a means to perform a handoff, whereby an untethered
device is [handed off] reassigned from a first base station to a second base station.

6. The system for handoff in accordance with Claim 1, wherein said first base station or said
second base station [are] is connected to a communication network whereby said
communication network may be an individual or plurality of other bridge devices, a
wireless network, a power line communication network, an ATM network, an Ethernet
network, a Gigabit Ethernet network, a PCI-Express network, a fiber optics network, a
local area loop, a cellular network, a home power line network, a digital subscriber line
network, a cable modem network, a cable television network, a copper line network, a
plain old telephone network, a packet based network, an 802.11 network, an 802.16
network, an 802.20 network, a Bluetooth network, an ultra wideband network, or other
similar network creating a mesh network.

7. The system for handoff in accordance with Claim 1, wherein said means to perform a
handoff comprising:

- a. determining signal strength data with respect to untethered devices,
b. evaluating said data in relation to a requirement, and
c. [handed off] reassigning said untethered device when said requirement is met,
whereby said untethered device is [handed off] reassigned from said first base
station to said second base station.

8. The system in accordance with Claim 1, wherein said tethered device is coupled to a
physical interface whereby said physical interface is a photo detector socket, a light bulb
socket, an electrical outlet, an enclosure attached inductively around a power transmission
line, an enclosure entirely housed in a sunlight photo detector attached to a photo detector
socket on a utility pole or street light, a means to interface spliced into a light fixture, a
means to interface spliced into a power transformer, or a means to interface spliced into
an electric meter.

9. The system for handoff in accordance with Claim 1, wherein said untethered device communicates using either wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these communication methods, and said tethered device communicates using either power line, wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these communication methods, and said means to perform a handoff is according to IEEE 802.16, IEEE 802.20, IEEE 802.15, IEEE 802.11 including IEEE 802.11e, ultra-wideband, GSM, CDMA, EDGE, GPRS, TDMA, WCDMA, CDMA2000, 3G, 4G, OFDM, flash OFDM specification or according to another communication protocol supporting handoff.

10. The system for handoff in accordance with Claim 1, wherein said tethered or said untethered device can also communicate using a method or protocol that does not support handoff.

12. The system for handoff in accordance with Claim 1, wherein said tethered device can repeat data from other tethered devices or other untethered devices associated with the same communication network or a different communication network.

13. The system for handoff in accordance with Claim 1, wherein said tethered device can track and locate untethered devices including mobile phones, monetary instruments, and individuals, and based on this real time positioning securely broadcast multimedia content whereby said untethered device stores the content according to digital rights management.

14. The system for handoff in accordance with Claim 1, wherein said tethered device does not integrate a receiver or does not integrate a transmitter whereby said receiver or said transmitter is located in a different location such that said tethered device uses a co-located receiver or a co-located transmitter over said communication network, or said mesh communication network, or said power line communication network as if said receiver or transmitter was located in said tethered device.

23. A device for handoff comprising:

a. a roadway luminaire.

- b. a communication circuitry,
- c. a physical interface of said roadway luminaire, wherein said physical interface provides power to said communication circuitry, and
- d. a means to [perform] request a handoff using said communication circuitry.

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24. The [physical interface] roadway luminaire in accordance with Claim 23, wherein said [photo detector] roadway luminaire and said physical interface of said roadway luminaire may be substituted by a light bulb socket, a means to interface spliced into a light fixture, a means to interface attached around or spliced into a power transmission line, a means to interface spliced into a power transformer, or a means to interface spliced into an electric meter.

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25. The device for handoff in accordance with Claim 24, wherein said means to perform a handoff [is communicating] uses power line communications through said physical interface by said communication circuitry, and said [photo detector socket] physical interface and said roadway luminaire may be substituted by an electrical outlet.

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26. The device for handoff in accordance with Claim 23, wherein said communication circuitry communicates using either power line, wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these communication methods, and said means to perform a handoff is according to GSM, CDMA, EDGE, GPRS, TDMA, WCDMA, CDMA2000, OFDM, flash OFDM, 3G, 4G, IEEE 802.16, IEEE 802.20, IEEE 802.15, or IEEE 802.11 specification including IEEE 802.11e or according to another communication protocol supporting handoff.

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27. The system for handoff in accordance with Claim 8, wherein said means to perform a handoff [is communicating] uses power line communications through said physical interface by said tethered device.

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28. The system for handoff in accordance with Claim 1, wherein said tethered device is said first base station and a different tethered device is said second base station.

29. The roadway luminaire in accordance with Claim 1, wherein said roadway luminaire may be substituted by an electric outlet, light bulb fixture, a means to interface spliced into a

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light fixture, a means to interface attached around or spliced into a power transmission line, a means to interface spliced into a power transformer, or a means to interface spliced into an electric meter.

30. The roadway luminaire in accordance with Claim 1 comprising:

- a. a lamp,
- b. a reflector,
- c. a ballast,
- d. wiring,
- e. a diffuser
- f. a physical interface, wherein said physical interface is a socket that can accept a removable sunlight photo detector device with a means to control the luminescence of said roadway luminaire,
- g. a mast, wherein said mast holds said lamp, said reflector, said ballast, wiring, said diffuser, and said socket, and
- h. said mast is attached along side a road so as to provide luminescence to the road.

31. The roadway luminaire in accordance with Claim 23 comprising:

- a. a lamp,
- b. a reflector,
- c. a ballast,
- d. wiring,
- e. a diffuser
- f. said physical interface is a socket, wherein said socket can accept a removable sunlight photo detector device with a means to control the luminescence of said roadway luminaire,
- g. a mast, wherein said mast holds said lamp, said reflector, said ballast, wiring, said diffuser, and said socket, and
- h. said mast is attached along side a road so as to provide luminescence to the road.

32. A method of handoff of a device tethered to and powered by a roadway luminaire comprising:

- a. determining signal strength data with respect to an untethered devices,
- b. evaluating said data in relation to a requirement, and
- c. reassigning said untethered device using power line communications when said requirement is met, whereby said untethered device is reassigned from a first base station tethered to a roadway luminaire to a second base station.

33. The method of handoff of Claim 32 further comprising:

- a. a means for adjusting the power output of an untethered device in relationship to the ideal signal strength, and
- b. substituting said means for determining signal strength data for a means for determining positioning data of said untethered devices.